

ABSTRACT OF THE DISCLOSURE

An optical transmission device configured as a central node, wherein each central node has dedicated pixels for receiving data and transmitting optical data so destination addressing is
5 not required. The network is configured such that transmission on any particular receiver reserved pixels results in data being sent to a predetermined node. In particular, the star topology is configured as a receiver reserved scheme. The device is formed by constructing central node of transmitters and receivers that are attached to a silicon substrate with a processing means, and the optical interface to the transmitters and detectors on the central node establish a one-to-one
10 correspondence with an individual fiber optic cable. The fiber optic cables are reconfigurable to different topologies or interconnections as each fiber optic cable has a known destination on the central node. Various topologies are possible using a star node as the building block.

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